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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,582	05/09/2006	James Andrew Chaundler	920602-100848	2720

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BARNES & THORNBURG LLP
P.O. BOX 2786
CHICAGO, IL 60690-2786

EXAMINER

SCRUGGS, ROBERT J

ART UNIT	PAPER NUMBER
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3723

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/29/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/559,582	CHAUNDLER ET AL.	
	Examiner	Art Unit	
	Robert Scruggs	3723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) none is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/2/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on December 2, 2005 is noted. The submission is in compliance with the provisions of 37 CFR 1.97 and 1.98. Accordingly, the information disclosure statement is being considered by the examiner.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The "external part of the shaft" is not described in the specification yet is claimed in claim 4. Figure 3, shows character (39) that could be the external part of the shaft but no reference to this character was made. The applicant needs to properly define the shaft including all the different parts in the specification in such a way that one could easily and reasonably interpret all the different parts of the shaft.

Drawings

4. Figures 1(a)-2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled

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"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

5. The drawings are also objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "36" has been used to designate both spindle housing and spindle body. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

6. The drawings are also objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the stator must be shown or the feature(s) canceled from the claim(s) and the external part and the inboard end of the shaft must be labeled. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 2-4 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 2, the applicant discloses, "the third bearing is located within the motor at said other end of the shaft." However, figures 4 and 5 show the bearing located outside the motor. Is the bearing actually within the

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motor? It appears that the applicant meant to disclose that the third bearing is located "within the motor housing." In order to expedite prosecution the examiner will assume this structural relationship. However, the applicant should amend to properly define where the bearing is actually located.

9. Claim 2, recites the limitation "the external part of the shaft" in line 2. There is insufficient antecedent basis for this limitation in the claim. Claim 2, also recites the limitation "the inboard end" in lines 1 and 2. There is insufficient antecedent basis for this limitation in the claim.

10. Claim 4, recites the limitation "the rotor" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pflager et al. (5443413) in view of Suzuki (JP 411013759).

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In reference to claim 1, Pflager discloses an apparatus for grinding cams comprising, a spindle (5) (Figure 1) including a shaft that has a grinding wheel (18) mounted at one end, a rigid elongated casing (1) extending axially from drive means formed as an electric motor (40), the shaft being carried by two hydrostatic bearings (64 and 65), wherein one of the hydrostatic bearings (64) being formed at a location near said one end of the shaft so as to be at a remote end from the motor and depending upon the length of the workpiece selected by a user, the shaft and the casing could inherently extend to the same length as the workpiece, but lacks, two hydrostatic bearings disposed on opposite sides of the motor. However, Suzuki discloses a spindle (1) Figure (1), which includes a motor (5) having hydrostatic bearings (9) formed at opposite ends thereof (see abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the motor housing, of Pflager, with hydrostatic bearings formed on opposite sides of the motor, in view of Suzuki, in order to provide a spindle that has an improved dynamic stiffness and a high rotation accuracy.

In reference to claim 2, Pflager shows that a bearing (65) can be placed at the inboard end of the shaft and Suzuki teaches that a third bearing could be placed within the motor housing at the other end of the shaft opposite to the inboard end.

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In reference to claim 3, Pflager also discloses a stator (14) is secured within a rigid motor housing (2) and when Pflager is taken in view of Suzuki, they teach that all the bearings could be secured within the rigid elongated casing or the rigid motor housing.

In reference to claim 4, Pflager also shows that the external part of the shaft is longer than the axial length of the rotor member (see figure 1).

In reference to claim 5, Pflager also shows a symmetrical design for the housing (2), which can be seen in figure 1.

In reference to claim 6, Pflager also discloses a water-cooling jacket (21) which forces water to follow a helical path around the motor.

In reference to claim 7, Suzuki also teaches of forming a spindle that is axisymmetrical which can be seen in figure 1.

In reference to claim 8, Pflager also discloses that oil is supplied to the bearing under pressure by a pump (28, 29), which draws oil from a reservoir (20).

In reference to claims 9 and 10, Pflager also discloses that a lower region (4) is formed as a collection box, which is used for draining heated oil.

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In reference to claim 12, Pflager in view of Suzuki disclose the claimed invention, therefore since the method is inherently suggested by the structure, the device formed by the combination of Pflager and Suzuki would inherently be able to perform aligning of the bearings as claimed in claim 12.

13. Claim 11, is rejected under 35 U.S.C. 103(a) as being unpatentable over Pflager et al. (5443413) in view of Suzuki (JP 411013759) and Lundin et al (5103701). Pflager discloses the claimed invention previously mentioned above, but lacks, a thermal barrier. However, Lundin et al. teaches of using a thermal barrier (22) for a machine tool (Column 3, Lines 52-63). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the lower region, of Pflager, with a thermal barrier, in view of Lundin et al. in order to prevent undesired transfer of heat.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Niino et al. (5833522) discloses a spindle that has hydrostatic bearings formed on opposing sides of a motor. Shinomoto et al. (6110023) teaches that multiple (i.e. 4) hydrostatic bearings could be used within a spindle used for grinding a workpiece.

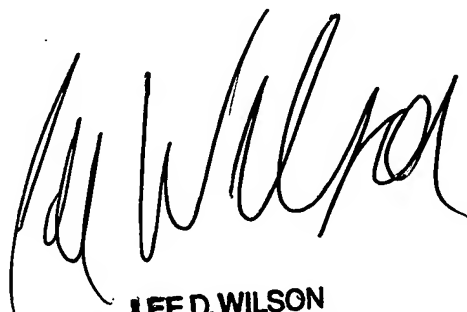
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Scruggs whose telephone number is 571-272-8682. The examiner can normally be reached on Monday-Friday, 8:30-5:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571-272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RS



LEE D. WILSON
PRIMARY EXAMINER